



TED (10) – 3057

(REVISION — 2010)

<https://mail.gptcthirurangadi.in>

Reg. No.....

Signature .....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018**

**ELECTRICAL TECHNOLOGY**

[Time : 3 hours

(Maximum marks : 100)

**PART — A**

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. What is inductive reactance when an inductance of  $L$  connected in a circuit having frequency  $f$ .
2. Define transformation ratio of a transformer.
3. What is the function of commutator in D.C generator ?
4. Define frequency of an alternator.
5. Define slip of an induction motor.

(5×2 = 10)

**PART — B**

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. State and explain Kirchhoff's current law and voltage law.
2. Write and explain the emf equation in the primary and secondary winding of a single phase transformer.
3. Explain back emf induced in d.c. motor.
4. Explain the working principle of an alternator.
5. Explain stepper motor, applications of stepper motor, name the types of stepper motor.
6. How can make single phase induction motor self starting.
7. Explain the applications of three phase induction motors.

(5×6 = 30)



## PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

## UNIT — I

- III (a) State and explain Maximum power transfer theorem. 9  
(b) Explain ideal and practical transformer. 6

OR

- IV (a) State Thevenin's Theorem. 7  
(b) Explain with diagram, test which used to determine the no load losses in a transformer. 8

## UNIT — II

- V (a) Explain emf equation of a d.c. generator. 7  
(b) Draw the diagram of a 3 point starter used for starting DC shunt motor. 8

OR

- VI (a) Draw the circuit diagram of series, shunt and compound wound d.c. generators. 8  
(b) Explain armature reaction in d.c. generator and its effects. 7

## UNIT — III

- VII (a) Explain the principle of operation of synchronous motor. 8  
(b) Explain the constructional details of Universal motor. 7

OR

- VIII (a) Explain servo motor and its applications. 9  
(b) Explain the relation between speed and frequency of an alternator. 6

## UNIT — IV

- IX (a) Draw the circuit diagram of DOL starter. 8  
(b) Explain capacitor start capacitor run induction motor. 7

OR

- X (a) Explain the procedure for measurement of earth resistance using Megger. 8  
(b) Draw and explain the method of pipe earthing. 7
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